

REMARKS

This responds to the Office Action mailed on March 5, 2004.

Claims 1-19 are pending in this application.

§103 Rejection of the Claims

Claims 1-19 were rejected under 35 USC § 103(a) as being unpatentable over Cooper (U.S. Patent No. 6,150,930) in view of Ouvrier-Buffet (U.S. Patent 6,320,189). This rejection is respectfully traversed.

Cooper does not teach the use of bolometer IR sensors which sense thermally-emitted IR. Cooper uses an illuminator at a much shorter wavelength than bolometers use. A microbolometer, as claimed in the current application, is used to detect long wavelengths of infrared radiation. Cooper specifically indicates that such a detector “would not provide critical information needed by a motor vehicle operator.” Col. 1, lines 36-39. Thus, **Cooper is lacking a microbolometer as claimed in each of the independent claims**. A prima facie case of anticipation has not been established, and the rejection should be withdrawn.

Cooper teaches away from the use of a bolometer as indicated above. Thus, it is not “only a matter of design choice” as indicated in the Final Office Action.

The Final Office Action states that Cooper shows “that traffic control colors are optimally sensed (see the abstract and Col. 2, lines 2-7 and Figs. 4a, 5, 6).” These references to Cooper only describe standard RGB silicon sensing elements. RGB sensing elements correspond to red, green and blue, not amber. While they can detect amber, they are not optimized to do so. They are commonly used sensing elements, and are not optimized in any manner for sensing traffic control signals. There is no evidence or suggestion that “traffic control colors are optimally sensed” as in independent claims 1, 7 and 8. Claim 13 references pixel elements optimally selective to colors encountered while driving an automobile, and claim 14, specifically adds filters corresponding to red, amber and green. In claim 15, the visible light pixel elements are selective to vehicle traffic control colors. Claim 16 specifically mentions the filters to make the pixel elements selective to vehicle traffic control colors. Claim 18 also references the visible light pixel elements being selective to vehicle traffic control colors.

The Final Office Action further states that “Cooper fails to specify that the infrared pixels are bolometer pixel elements and that there is a thermally isolating space between the first and second sensor array. However this constitutes only a matter of design choice because he does not specify nor limit the type of infrared sensor pixels that can be used in his detector, and since he states that any conventionally available silicon based detector will do...” This type of reasoning seems to be based on an assumption that the missing teaching is inherent in Cooper. The Final Office Action has not established a *prima facie* case of inherency because, as recited in MPEP § 2112, “In relying upon the theory of inherency, the examiner must provide basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art,” citing Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original). The Final Office Action only argued that Cooper did not limit the type of IR sensor pixels that could be used. This clearly does not establish inherency, and as admitted, Cooper fails to specifically teach it. Therefore, the rejection should be withdrawn.

The Final Office Action also states that “the visible pixel elements are selective to the colors red, green and blue respectively, which are the colors aiding in the optimal detection of the traffic control colors.” This statement is respectfully traversed. These are standard pixel elements used to sense all colors. They are not optimized for specifically sensing traffic control colors, and there is no suggestion in the references that they are.

The Final Office Action admits with respect to claim 14 that “Cooper does not specifically disclose amber as one of the selective colors, however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have amber instead of blue as one of the detected colors since that would be more helpful in identifying all the colors of the traffic light and because Cooper, by disclosing that other types of complimentary filters can be used that pass all visible wavelengths but notch out a particular color, does not limit his invention to detecting only red, green and blue as the selective colors but allows for the detection of other desired colors as well. Again, it is admitted that an amber filter is not disclosed in the reference, but appears to be indicating that such a filter is inherent. No proper *prima facie* case of inherency has been established, and the rejection should be withdrawn. Further, a reference that mentions that other types of filters can be used, does not specifically teach the type of filter

claimed. There is no teaching in Cooper of the desirability of using an amber filter, and it cannot be inferred from such a broad statement.

In the Response to Arguments section of the Final Office Action, it is argued that Kern et al. (U.S. Patent 4,296,624) shows bolometers being used as efficient short wavelength detectors. This argument is respectfully traversed. Kern et al. discusses indicates that a thermistor bolometer can be used for detecting heat from fires, which are very intense sources. Hence, they do not need to be efficient, and Kern et al. is not proof that they can be used as efficient short wavelength detectors.

The Final Office Action also indicates that a thermal isolator “is inherent in the arrangement and function of two superposed detectors where the one on top is a thermal detector (bolometer), since it is well known in the field of bolometer manufacturing that without thermal isolation between the first and second detectors the reading of the detectors is erroneous.” These statements do not establish a prima facie case of inherency since it is not proven that the result necessarily flows. For instance, there may be a situation where both detectors are actively cooled, with no need for thermal isolation. Further, the statement appears to take official notice of a requirement for thermal isolation. The Examiner is requested to provide an affidavit or reference to support such statements. Official notice also appears to be taken with respect to the purpose and function of a gap in Ouvrier-Buffet. Again, a reference or affidavit to that fact is requested.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612) 373-6972 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.


Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 27 day of April, 2004.

Gina M. Uphus

Name



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